IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re Patent Application of	
Guerney D. H. HUNT et al.	Examiner: KAWSAH, Abdullah Al
Serial No: 10/650,107	Art Unit: 2195
Filed: August 26, 2003	
For: TIME-BASED MULTI-TIERED MANAGEMENT OF RESOURCE SYSTEMS	

APPEAL BRIEF

Board of Patent Appeals and Interferences
United States Patent and Trademark Office
P.O. Box 1450
Alexandria, VA 22313-1450

Dear Sir:

The Applicant submits this brief pursuant to 37 C.F.R. §41.37(a)(1) in furtherance of the Notice of Appeal filed April 17, 2008.

Please charge Deposit Account 50-0510 the $510 fee for filing this Appeal Brief. No other fee is believed due with this Appeal Brief, however, should another fee be required please charge Deposit Account 50-0510.

Real Party in Interest

The real party in interest with respect to the present application is International Business Machines Corporation.

Related Appeals and Interferences

The Appellants' legal representative does not know of any other appeal, interference or judicial proceeding which will affect or be directly affected by or have bearing on the Board's decision in the pending appeal.

Status of Claims

Claims 1-5 and 7-11 are pending in the present application, with claim 1 being an independent claim. Claims 6 and 12-34 are cancelled. Claims 1-5 and 7-11 are currently finally rejected and are the subject of this appeal.

Status of Amendments

In an Amendment dated April 17, 2008, claims 12-17, 19-28 and 30-34 were canceled to place the application in better condition for appeal. No amendments to claims 1-5 and 7-11 were made after the Final Office Action dated November 20, 2007 ("FOA").

Additionally, claims 12, 13 and 24 had been amended by an Amendment dated January 17, 2008. However, as noted above, claims 12, 13 and 24 are canceled and therefore are not pending in the present application.

Summary of the Claimed Subject Matter

Claim 1 recites a method for managing a multi-tiered resource system. App., pp. 1, ll. 29-30; pp. 6, ll. 13-14; and pp. 11, ll. 16-18, Fig. 7. See also pp. 16, ll. 18-30. The method comprises automatically determining if a resource tier is in compliance with a management policy. App., pp. 1, ll. 30 to pp. 2, ll. 1; pp. 6, ll. 13-16; pp. 9, ll. 7-9, Fig. 6, item 604; and pp. 12, ll. 16-18, Fig. 7, item 708. See also pp. 11, ll. 18-20; pp. 16, ll. 18-30; pp. 9, ll. 9-11; and pp. 6, ll. 7-10. The management policy includes requiring that an expiration date of the resource tier occur after a maintenance date. App., pp. 2, ll. 4-6; pp. 6, ll. 18-21; pp. 9, ll. 9-11; and pp. 12, ll. 18-20. See also pp. 16, ll. 18-30 and pp. 6, ll. 7-10. The method further comprises, if the resource tier is not in compliance with the management policy, automatically increasing available capacity in containers in order to bring the containers in compliance with the management policy. App., pp. 9, ll. 23-27, Fig. 6, item 614 and pp. 6, ll. 32 to pp. 7, ll. 4, Fig. 4, dotted line.

Claim 2 is dependent on claim 1 and recites that increasing available capacity in containers includes allocating additional capacity to containers belonging to the resource tier until the resource tier is in compliance with the management policy. App., pp. 9, ll. 27-31, Fig. 6, item 616 and pp. 13, ll. 2-6, Fig. 7, item 712. See also App., pp. 9, ll. 9-11 and pp. 6, ll. 7-10.

Claim 4 is dependent on claim 2 and recites that allocating additional capacity to the containers includes utilizing available capacity from other containers in the

resource system. App., pp. 9, ll. 31 to pp. 10, ll. 1,
Fig. 6, item 616; pp. 14, ll. 28 to pp. 15, ll. 1, Fig.
9A, items 906-910; pp. 15, ll. 4-9, Fig. 9A, items 914-
916; and pp. 15, ll. 21 to pp. 16, ll. 13, Fig. 10.

Claim 5 is dependent on claim 2 and recites that
allocating additional capacity to the containers includes
allocating additional capacity to containers of higher
importance before allocating additional capacity to
containers of lower importance. App., pp. 10, ll. 3-11,
Fig. 6, items 614 and 618; pp. 9, ll. 27-31, Fig. 6, item
616; pp. 12, ll. 10-15, Fig. 7, item 704 and 706; and pp.
13, ll. 2-6, Fig. 7, item 712.

Claim 7 is dependent on claim 1 and recites
calculating the expiration date of the resource tier.
App., pp. 9, ll. 9-13, Fig. 6, item 606; pp. 11, ll. 26 to
pp. 12, ll. 8, Fig. 7, item 702; and pp. 13, ll. 12 to pp.
14, ll. 17, Fig. 8. See also pp. 6, ll. 7-10 and pp. 7,
ll. 27-29.

Claim 8 is dependent on claim 7 and recites that
calculating the expiration date of the resource tier
includes calculating a life expectancy of each container
belonging to the resource tier. App., pp. 11, ll. 26 to
pp. 12, ll. 8, Fig. 7, item 702 and pp. 13, ll. 12 to pp.
14, ll. 12, Fig. 8, items 802-814. See also pp. 7, ll.
27-29.

Claim 9 is dependent on claim 8 and recites that
calculating the life expectancy of the containers includes
adjusting the life expectancy of the containers to account
for container lead-time. App., pp. 11, ll. 33 to pp. 12,

ll. 8, Fig. 7, item 702 and pp. 14, ll. 12-17, Fig. 8, item 816.

Claim 10 is dependent on claim 1 and recites, if the resource tier cannot be brought in compliance with the management policy, alerting that the resource tier is not in compliance with the management policy. App., pp. 11, ll. 1-9, Fig. 6, item 622 and pp. 12, ll. 23-31, Fig. 7, items 710 and 718. See also App., pp. 9, ll. 9-11 and pp. 6, ll. 7-10.

Claim 11 is dependent on claim 1 and recites that increasing available capacity in containers includes compressing data within the resource tier until the resource tier is in compliance with the management policy. App., pp. 10, ll. 12-21, Fig. 6, item 620. See also App., pp. 9, ll. 9-11 and pp. 6, ll. 7-10.

Grounds for Rejection to be Reviewed on Appeal

I. Claims 1-5 and 7-10 are rejected under 35 U.S.C. §103 as being obvious over "Tivoli® Storage Network Manager" ("Tivoli") in view of "The Use of Life Expectancy to Manage Lotus Notes® Email Storage" by William "Bucky" Pope and Lily Mummert ("Pope").

II. Claim 11 is rejected under 35 U.S.C. §103 as being obvious over Tivoli in view of Pope and further in view of U.S. Patent No. 5,960,169 to Styczinski ("Styczinski").

Argument

I. CLAIMS 1-5 AND 7-10 ARE NOT OBVIOUS OVER TIVOLI IN VIEW OF POPE

"The identical invention must be shown in as complete detail as is contained in the ... claim." Richardson v. Suzuki Motor Co., 868 F.2d 1226, 1236, 9 USPQ2d 1913, 1920 (Fed. Cir. 1989). Furthermore, "[d]uring patent examination, the pending claims must be 'given their broadest reasonable interpretation consistent with the specification.'" MPEP, 2111 quoting In re Hyatt, 21 1 F.3d 1367, 1372, 54 USPQ2d 1664, 1667 (Fed. Cir. 2000) (emphasis added). Moreover, the "broadest reasonable interpretation of the claims must also be consistent with the interpretation that those skilled in the art would reach." Id., quoting In re Cortright, 165 F.3d 1353, 1359, 49 USPQ2d 1464, 1468 (Fed. Cir. 1999) (emphasis added).

Claim 1

Claim 1 recites, in part, "automatically determining if a resource tier is in compliance with a management policy, wherein the management policy includes requiring that an expiration date of the resource tier occur after a maintenance date."

In rejecting claim 1, the Examiner alleges that Pope teaches "the management policy includes requiring that an expiration date of the resource tier occur after a maintenance date." FOA, pp. 3. The Examiner cites page 1, column 2, lines 13-18 through page 2, column 1, lines 1-8 of Pope. Id. The cited passage states,

We demonstrate that these decisions are made simpler by
calculating the life expectancy of a unit of storage.
Life expectancy is the time left before a file system
fills up. It is calculated using the existing
utilization and the historical growth rate of storage
usage. Traditionally, we monitor these at an aggregate
level, such as a file system. We demonstrate the value
of keeping individual histories of email databases,
which transfer with the database as it migrates from
one server to another. We then use the impact of each
database on the life expectancy of a file system to
make more intelligent administrative decisions. Pope,
pp. 1, col. 2, ll. 13 through pp. 2, col. 1, ll. 8.

The Appellants respectfully submit that the cited
passage fails to teach or suggest a management policy.
While the passage discloses ". . . these decisions . . ."
and ". . . we then use the impact of each database on the
life expectancy of the file system to make more
intelligent administrative decisions . . .", nothing in
the cited passage teaches or suggests that the decisions
disclosed by Pope are based on a management policy.

Additionally, the specification states, "A
maintenance date represents the beginning of a maintenance
window during which the storage system may be modified
with little or no adverse impact on the operations of the
entity utilizing the storage system." App., pp. 6, ll.
22-25. The Appellants respectfully submit that the
passage cited in Pope clearly fails to teach or suggest a
date representing the beginning of a maintenance window
during which a storage system may be modified with little
or no adverse impact on the operations of an entity
utilizing the storage system.

The Appellants respectfully submit that the cited passage fails to teach or suggest requiring an expiration date occur after a maintenance date. Therefore, the cited passage cannot teach that a management policy includes requiring that an expiration date of the resource tier occur after a maintenance date as is required by claim 1.

In regard to the same claim limitation, the Examiner additionally cites page 2, column 2, lines 41-48 through page 3, column 1, lines 1-2 of Pope. FOA, pp. 3. The cited passage states,

> Installations try to impose limits but compliance is frequently voluntary and users are not motivated to do frequent or consistent housekeeping. The result is inevitable. Utilization increases to the limit and the operating system is forced into failure mode, usually at the worst time. This means that we must act preemptively to prevent such an occurrence. The time period between today and the expected date of failure we call *life expectancy*. Pope, pp. 2, col. 2, ll. 41 through pp. 3, col. 1, ll. 2.

The Appellants respectfully submit that the cited passage fails to teach or suggest a management policy. While the passage discloses that ". . . we must act preemptively . . .", nothing in the cited passage teaches or suggests that the specific preemptive actions taken are based on a management policy.

Additionally, the Appellants respectfully submit that the cited passage clearly fails to teach or suggest a date representing the beginning of a maintenance window during which a storage system may be modified with little or no adverse impact on the operations of an entity utilizing the storage system.

As with the preceding passage, the Appellants respectfully submit that the cited passage fails to teach or suggest requiring an expiration date occur after a maintenance date. Therefore, the cited passage cannot teach that a management policy includes requiring that an expiration date of the resource tier occur after a maintenance date as is required by claim 1.

Furthermore, it is well settled that "rejections on obviousness grounds cannot be sustained by mere conclusory statements; instead, there must be some articulated reasoning with some rational underpinning to support the legal conclusion of obviousness." In re Kahn, 441 F.3d 977, 988, 78 USPQ2d 1329, 1336, quoted with approval in KSR Int'l Co. v. Teleflex Inc., 127 S. Ct. 1727, 1741, 82 USPQ2d 1385, 1396 (2007).

In rejecting claim 1, the Office Action alleges that Pope "teaches that the management policy includes requiring that an expiration date of the resource tier occur after a maintenance date." FOA, pp. 3. The Examiner argues that this claim element is found in Pope by merely copying the claim element and citing page, column and line numbers. The rejection does not provide a comprehensive explanation of why the Examiner considers the limitation of claim 1 disclosed in Pope. In particular, the rejection fails to allege which structures disclosed by Pope are equivalent to the management policy, the expiration date and the maintenance date required by claim 1. Therefore, the Appellants respectfully submit

that the Examiner has failed to meet the legal burden required to demonstrate a conclusion of obviousness.

Moreover, in an Advisory Action dated May 14, 2008 ("AA"), the Examiner alleges,

> Tivoly [sic] teaches the automated monitoring of the system from any system failure of policy defined threshold and constantly allocates storage as needed (page 1, col 1, lines 1-20). Since the system keeps monitoring the container according to the policy defined threshold continuously the expiration date of the container will be always after the maintenance date. AA, pp. 2.

Page 1, column 1, lines 1-20 of Tivoli state,

> Highlights
>
> Tivoli Storage Network Manager is a comprehensive ANSI standards-based solution that manages storage area network (SAN) infrastructures and their associated storage resources. This unique solution discovers, monitors, and manages SAN components while automating and allocating attached disk resources. It is built upon an architecture that can scale to handle very large and complex configurations. Tivoli Storage Network Manager provides features to manage SAN topology, assign available disk resources to manage hosts, and automatically extend file systems using administrator-defined policies.
>
> Tivoli Storage Network . . . . Tivoli, pp. 1, col. 1, ll. 1-20.

The Appellants respectfully submit that the passage of Tivoli cited by the Examiner contains no teaching or suggestion of requiring that an expiration date of the resource tier occur after a management date.

Moreover, the cited passage contains no teaching or suggestion of a policy defined threshold. While the

passage discloses administrator-defined policies, the
passage is devoid of any disclosure that the
administrator-defined policies define a threshold.
Therefore, the cited passage cannot, by itself, teach
monitoring a container according to a policy defined
threshold.

However, the following passage of Tivoli discloses a
policy-defined threshold:

> By applying policy-driven automation to monitored file
> systems, Tivoli Storage Network Manager enables you to
> set policies across an entire SAN, computer group, to
> individual computers, and to their specific file
> systems. Tivoli Storage Network Manager continuously
> monitors these resources as they approach a policy-
> defined threshold or capacity level.
>
> When a threshold is exceeded, Tivoli Storage Network
> Manager automatically identifies and formats the
> appropriate unassigned disk LUNs with the proper file
> system, and then extends the file system with
> additional capacity. This unique automation capability
> greatly reduces administrative workload and ensures
> continuous application availability. Tivoli, pp. 2,
> col. 2, ll. 17-20 through pp. 2, col. 3, ll. 1-18.

The Appellants submit that the cited passage of Tivoli
contains no teaching or suggestion of requiring that an
expiration date of the resource tier occur after a management
date.

Moreover, neither the cited passage nor any other passage
of Tivoli teaches or suggests that the threshold is a date or
another measurement of a temporal quantity, e.g., days of life
expectancy. To the contrary, Tivoli discloses a "policy-
defined threshold or capacity level" but subsequently speaks
only of a threshold. This suggests that the threshold of

Tivoli is a capacity level as opposed to a date value. By
contrast, claim 1 requires a management policy which includes
requiring that an expiration date of the resource tier occur
after a maintenance date. The Appellants respectfully submit
that because the threshold is not a date value, the threshold
cannot be equivalent to either the expiration date or the
maintenance date required by claim 1. Accordingly, extending
the file system with additional capacity when a threshold is
exceeded as disclosed by Tivoli cannot be equivalent to
requiring that an expiration date of the resource tier occur
after a maintenance date as required by claim 1.

Furthermore, the Examiner's argument, "Since the system
keeps monitoring the container according to the policy defined
threshold continuously the expiration date of the container
will be always after the maintenance date", is purely
conclusory. The Examiner has not explained, and it is not
apparent, how monitoring the container according to the policy
defined threshold continuously results in the expiration date
of the container always being after the maintenance date.

Additionally, extending a file system with additional
capacity when a threshold is exceeded as disclosed by Tivoli
is not equivalent to requiring that an expiration date of the
resource tier occur after a maintenance date as is required by
claim 1. As a counterexample, suppose that a particular file
system for which a policy-defined threshold was just exceeded
has an expiration date two days in the future and a
maintenance date ten days in the future. Because the
threshold was exceeded, the file system is extended with
additional capacity. The additional capacity causes the

expiration date of the file system to be advanced by three days, to a total of five days in the future. However, despite this improvement, the expiration date of the file system is five days <u>before</u> the maintenance date. In this example, extending the file system with additional capacity as disclosed by Tivoli failed to cause the expiration date to occur after a maintenance date.

For at least these reasons, the Appellants respectfully assert that the Examiner has not established a *prima facie* case of obviousness for claim 1. The Appellants submit that the rejection of claim 1 is in error and respectfully request that the rejection of claim 1 be reversed by the honorable Board.

<u>Claims 2-3</u>

Claims 2 and 3 are dependent on and further limit claim 1. Since the rejection of claim 1 is believed in error, the rejections of claims 2 and 3 are also believed in error for at least the same reasons as claim 1.

<u>Claim 4</u>

Claim 4 recites, "The method of claim 2, wherein allocating additional capacity to the containers includes utilizing available capacity from other containers in the resource system." It is emphasized that claim 4 thus requires that additional capacity is allocated. This is evident from the wording of claim 4 itself. Furthermore, because claim 4 is dependent on claim 2, claim 4 incorporates all limitations found in claim 2. Claim 2 recites, "The method of claim 1, wherein increasing

available capacity in containers includes allocating additional capacity to containers belonging to the resource tier until the resource tier is in compliance with the management policy." This further clarifies that claim 4 requires allocating additional capacity.

In rejecting claim 4, the Examiner alleges that Pope teaches the claim limitation, "wherein allocating additional capacity to the containers includes utilizing available capacity from other containers in the resource system." FOA, pp. 4. Specifically, the Examiner cites the following passage: "If space is available elsewhere, a second approach is to move files out of the file system." Pope, pp. 4, col. 2, ll. 12-13.

As previously noted, claim 4 requires that additional capacity is allocated. The Appellants respectfully submit that moving files out of a file system cannot be equivalent to allocating additional capacity. Those skilled in the art will appreciate that the capacity of a file system is the total amount of data which the file system can hold. Capacity is different than free space, which is the portion of the total capacity which does not currently contain data and which may therefore store new data. Moving a file out of a file system generally increases the free space available at the file system. This occurs because the subset of the total capacity previously occupied by the file is now available to store new data. Moving a file out of a file system does not, however, change the capacity of the file system. Because moving a file out of a file system does not increase the capacity of the file system, it cannot be equivalent to allocating additional

capacity as is required by claim 4.

Moreover, in the Advisory Action, the Examiner alleges, "[Pope] teaches moving files from the container to other containers if space is available and that would increase the capacity of the container to be able to have more storage space (Page 4, col 2, lines 12-13)." AA, pp. 2.

For the reasons previously noted, moving a file out of a file system generally increases the free space available at the file system but does not change the capacity of the file system. Similarly, moving a file out of a file system does not cause the file system to have more storage space. Moving a file out of a file system causes the subset of the total storage space previously occupied by the file to be available to store new data. However, moving a file out of a file system does not increase the storage space available at the file system. Therefore, moving files out of a file system is not equivalent to causing a container to be able to have more storage space. It follows that moving files out of a file system is not equivalent to increasing the capacity of a container to be able to have more storage space.

For at least these reasons, the Appellants respectfully assert that the Examiner has not established a *prima facie* case of obviousness for claim 4. The Appellants submit that the rejection of claim 4 is in error and respectfully request that the rejection of claim 4 be reversed by the honorable Board.

Claim 5

Claim 5 recites, "The method of claim 2, wherein allocating additional capacity to the containers includes allocating additional capacity to containers of higher importance before allocating additional capacity to containers of lower importance."

The Examiner alleges that Pope teaches claim 5. FOA, pp. 4-5. In support of this position, the Examiner cites the following passage:

> Administrators can look through the list and select the candidates to move until they reach some desired threshold of new life expectancy. This is necessary because the largest fastest growing files are the prime candidates . . . . Pope, pp. 4, col. 2, ll. 43 through pp. 5, col. 1, ll. 3.

The passage cited by the Examiner does not disclose that containers vary in importance. Therefore, the cited passage cannot teach containers of higher importance and containers of lower importance.

Moreover, those skilled in the art will appreciate that certain resources (e.g., data, computing systems, or other functionality) are referred to as "mission critical" to indicate that they are particularly essential to an organization. Mission critical resources are typically those without which core functions would fail. Resources which are mission critical are clearly of higher importance than resources which are not mission critical. Whether or not a file is mission critical is distinct from the rate of growth of the file. Thus, a slowly growing file may be mission critical and therefore of higher

importance relative to a rapidly growing file which is not mission critical and therefore of lower importance. Therefore, the largest and fastest growing files disclosed by Pope are clearly not inherently equivalent to containers of higher importance as required by claim 5.

Furthermore, in the absence of an express intent to impart a novel meaning to the claim terms, the words are presumed to take on the ordinary and customary meanings attributed to them by those of ordinary skill in the art. MPEP 2111.01 citing Brookhill-Wilk 1, LLC v. Intuitive Surgical, Inc., 334 F.3d 1294, 1298 67 USPQ2d 1132, 1136 (Fed. Cir. 2003). Thus, the Applicants can act as their own lexicographers and define in the claims what they regard as their invention essentially in whatever terms they choose so long as any special meaning assigned to a term is clearly set forth in the specification. MPEP 2173.01.

Claim 5 requires "containers of higher importance" and "containers of lower importance". The specification describes containers as follows: "As used herein, a container is an identifiable part of a resource having a storage limit. A container, for example, may be a disk partition, a group of storage volumes, or an entire storage system." App., pp. 5, ll. 7-10. A file is not inherently equivalent to a container because files do not inherently have storage limits and containers have storage limits. Because a file is not inherently equivalent to a container, it follows that a fastest growing file is not inherently equivalent to a container of higher importance.

Moreover, in the Advisory Action, the Examiner alleges, "[Pope] teaches having containers that are reaching the threshold and the fastest growing container is the prime candidate (page 4, col 2, lines 43 – 44)." AA, pp. 2. The passage cited by the Examiner is included in the passage cited above.

The passage recites, ". . . the largest fastest growing files are the prime candidates . . . ." However, for the reasons previously noted, a file is not inherently equivalent to a container. Therefore, the disclosure by Pope that the largest fastest growing files are the prime candidates is not equivalent to a teaching that the fastest growing container is the prime candidate.

The Examiner further alleges, "Prime candidate container is the container with higher importance and would require sevice [sic] before any other container in the list which also shows that containers vary in importance." AA, pp. 2.

In making a prima facie case of equivalence, the Examiner should provide an explanation and rationale in the Office action as to why the prior art element is an equivalent. MPEP 2183. The Examiner has not explained, and it is not apparent, why a prime candidate container is equivalent to the container with higher importance.

Furthermore, the Appellants respectfully submit that the Examiner's allegation that the prime candidate container would require service before any other container in the list is purely conclusory. The Examiner has not explained, and it is not apparent, why the prime candidate

container would require service before any other container
in the list.

    To the contrary, regarding the prime candidates, Pope
states,

> This is necessary because the largest fastest growing
> files are the prime candidates and, without some
> judgement on the administrator's part, they will be
> moved every time. <u>Pope</u>, pp. 5, col. 1, ll. 1-5.

    It is evident from the cited passage that an
administrator may exercise judgment as to whether the
largest fastest growing files should be moved. If such
judgment is exercised, the largest fastest growing files,
which are also described as "prime candidates", are not
moved. Therefore, the files described as "prime
candidates" clearly do not inherently require service
before any other element in the list. It follows that the
files described as "prime candidates" are not inherently
of higher importance than files not so described.

    For at least these reasons, the Appellants
respectfully assert that the Examiner has not established
a *prima facie* case of obviousness for claim 5. The
Appellants submit that the rejection of claim 5 is in
error and respectfully request that the rejection of claim
5 be reversed by the honorable Board.

<u>Claim 7</u>

    Claim 7 is dependent on and further limits claim 1.
Since the rejection of claim 1 is believed in error, the
rejection of claim 7 is also believed in error for at least
the same reasons as claim 1.

Claim 8

Claim 8 is dependent on claim 7 and recites, "The method of claim 7, wherein calculating the expiration date of the resource tier includes calculating a life expectancy of each container belonging to the resource tier." It follows that claim 8 requires that at least one container belongs to a resource tier.

The Examiner alleges that Pope teaches claim 8. FOA, pp. 5. In support of this position, the Examiner cites the following passage:

> Large installations can have hundreds of servers and thousands of file systems to monitor. Each file system contains a unique set of files with their own growth patterns, which accumulate to produce a different growth pattern for each file system. Pope, pp. 4, col. 1, ll. 1-5.

The cited passage fails to recite either calculating an expiration date or calculating a life expectancy. Therefore, the Appellants respectfully submit that the cited passage cannot teach or suggest that calculating the expiration date of the resource tier includes calculating a life expectancy of each container belonging to the resource tier.

Moreover, the cited passage fails to clearly disclose a method step. Instead, the cited passage teaches a property of file systems, namely that "[e]ach file system contains a unique set of files with their own growth patterns, which accumulate to produce a different growth pattern for each file system." Absent from the cited passage is any teaching or suggestion that the property recited is the result of any method step recited by Pope. Because the cited passage fails

to recite a method step, it clearly cannot teach claim 8.

The Examiner further cites the following passage:

> The strategy we've chosen is to organize file systems by their life expectancy, with the shortest being first. Pope, pp. 4, col. 1, ll. 10-11.

As previously noted, claim 8 requires that at least one container belongs to a resource tier. However, the cited passage fails to teach or suggest that any structure (e.g., any file system) belongs to any other structure. Therefore, the Appellants respectfully submit that the cited passage fails to teach or suggest that calculating the expiration date of the resource tier includes calculating a life expectancy of each container belonging to the resource tier as is required by claim 8.

Moreover, in the Advisory Action, the Examiner alleges, "[Pope] teaches calculating the growth pattern of the containers (page 4, col 1, lines 1 – 5) . . . ." AA, pp. 2.

The Appellants respectfully submit that as previously noted, the cited passage teaches a property of file systems and fails to disclose a method step. Calculating the growth pattern of the containers is clearly a method step. Because the cited passage does not disclose a method step, it clearly cannot teach calculating the growth pattern of the containers as alleged by the Examiner.

The Examiner further alleges, "The growth pattern of the file system is the life expectency [sic] of the container . . . ." AA, pp. 2.

In making a *prima facie* case of equivalence, the Examiner should provide an explanation and rationale in the Office action as to why the prior art element is an equivalent. MPEP 2183. The Examiner has not explained, and it is not apparent, why the growth pattern of the file system is equivalent to the life expectancy of the container.

Moreover, in the absence of an express intent to impart a novel meaning to the claim terms, the words are presumed to take on the ordinary and customary meanings attributed to them by those of ordinary skill in the art. MPEP 2111.01 citing Brookhill-Wilk 1, LLC v. Intuitive Surgical, Inc., 334 F.3d 1294, 1298 67 USPQ2d 1132, 1136 (Fed. Cir. 2003). Thus, the Applicants can act as their own lexicographers and define in the claims what they regard as their invention essentially in whatever terms they choose so long as any special meaning assigned to a term is clearly set forth in the specification. MPEP 2173.01.

The specification defines the term, "life expectancy", as follows: "The life expectancy 302 of a container is the period of time from the last measurement 304 of the container until the container's resource utilization reaches its limit 306." App., pp. 5, ll. 27-29. The growth pattern of a file system is clearly not equivalent to the period of time from the last measurement of the container until the container's resource utilization reaches its limit.

Furthermore, a life expectancy is a period of time. A growth pattern of a file system is not a period of time. Therefore, a growth pattern of a file system is clearly not equivalent to a life expectancy of a container.

The Examiner further alleges, ". . . and each container keeps has [sic] a growth pattern set which is the life expectency [sic] calculation." <u>AA</u>, pp. 2.

Again, the Examiner has not explained, and it is not apparent, why the growth pattern set is equivalent to the life expectancy calculation.

For at least these reasons, the Appellants respectfully assert that the Examiner has not established a *prima facie* case of obviousness for claim 8. The Appellants submit that the rejection of claim 8 is in error and respectfully request that the rejection of claim 8 be reversed by the honorable Board.

<u>Claim 9</u>

Claim 9 is dependent on claim 8 and recites, "The method of claim 8, wherein calculating the life expectancy of the containers includes adjusting the life expectancy of the containers to account for container lead-time."

The Examiner alleges that Pope teaches claim 9. <u>FOA</u>, pp. 5. In support of this position, the Examiner cites the following passage:

> The time period between today and the expected date of failure we call *life expectancy*.
>
> An administrator is faced with two major aspects of the storage decision: when to take action and what to do when action is necessary. Sufficient lead-time is

determined by the time needed to act plus some margin for error.

Administrators may expand storage, or move data. Given the administrator decides to expand storage, the question is how much. This is an affordability question, which can be represented by life expectancy. For example, if one size disk increases the life expectancy of the storage system to one year, we would consider this a reasonable alternative. <u>Pope</u>, pp. 3, col. 1, ll. 1-14.

The cited passage recites "life expectancy" and "lead-time." However, absent from the cited passage is any teaching or suggestion of adjusting the life expectancy to account for the lead-time. Therefore, the Appellants respectfully submit that the cited passage cannot teach or suggest that calculating the life expectancy of the containers includes adjusting the life expectancy of the containers to account for container lead-time.

Moreover, in the Advisory Action, the Examiner states, "Calculating life expectency [sic] is for making storage decision [sic] which means determining lead-time for storage decisions incorporates with life expectency [sic] calculation of the container." <u>AA</u>, pp. 2.

Claim 9 recites, "adjusting the life expectancy of the containers to account for container lead-time." The Appellants respectfully submit that calculating life expectancy of a container together with determining lead-time for storage decisions is not equivalent to adjusting the life expectancy of the containers to account for container lead-time. Even if both calculating life

expectancy and determining lead-time are performed for the same purpose, namely making storage decisions, it does not inherently follow that the calculated life expectancy is adjusted to account for the determined lead-time. Therefore, even assuming *arguendo* that Pope discloses both calculating the life expectancy of a container and determining lead-time for storage decisions, it does not follow that Pope discloses adjusting the life expectancy of the containers to account for container lead-time as required by claim 9.

For at least these reasons, the Appellants respectfully assert that the Examiner has not established a *prima facie* case of obviousness for claim 9. The Appellants submit that the rejection of claim 9 is in error and respectfully request that the rejection of claim 9 be reversed by the honorable Board.

Claim 10

Claim 10 is dependent on claim 1 and recites, "The method of claim 1, further comprising if the resource tier cannot be brought in compliance with the management policy, alerting that the resource tier is not in compliance with the management policy." Thus, claim 10 not only requires alerting but further requires that the alert is issued if a resource tier cannot be brought into compliance with a management policy. Claim 10 further requires that the alert specifies that the resource tier is not in compliance with the management policy.

The Examiner alleges that Tivoli teaches claim 10.
FOA, pp. 5. In support of this position, the Examiner
cites the following passage:

> Events and data from the SAN are captured and processed
> providing you with information, alerts, and
> notification for problem resolution. Tivoli, pp. 3,
> col. 1, ll. 12 through pp. 3, col. 2, ll. 3.

While Tivoli discloses "alerts", minimal detail is
disclosed regarding the alerts. Specifically, devoid from
Tivoli is any teaching or suggestion that an alert is
issued if a resource tier cannot be brought into
compliance with a management policy as is required by
claim 10. Tivoli similarly fails to contain any teaching
or suggestion that an alert specifies that a resource tier
is not in compliance with a management policy as is
required by claim 10. Therefore, the Appellants
respectfully submit that the cited passage cannot teach or
suggest that if the resource tier cannot be brought in
compliance with the management policy, alerting that the
resource tier is not in compliance with the management
policy.

Moreover, in the Advisory Action, the Examiner
states, "Tivoli also discloses the system is monitored
from reaching policy defined threshold or capacity level
(page 2, col 3, lines 3-7) which is not being able to
increase the capacity of the container." AA, pp. 2.

The passage of Tivoli cited by the Examiner states,
". . . file systems. Tivoli Storage Network Manager
continuously monitors these resources as they approach a

policy-defined threshold or capacity level." <u>Tivoli</u>, pp. 2, col. 3, ll. 3-7.

The Appellants respectfully submit that the cited passage of Tivoli is devoid of any mention of not being able to increase the capacity of a container. To the contrary, the passage immediately following the passage of Tivoli cited by the Examiner states,

> When a threshold is exceeded, Tivoli Storage Network Manager automatically identifies and formats the appropriate unassigned disk LUNs with the proper file system, and then extends the file system with additional capacity. This unique automation capability greatly reduces administrative workload and ensures continuous application availability. <u>Tivoli</u>, pp. 2, col. 3, ll. 8-18.

It is evident from this passage that Tivoli Storage Network Manager may respond to a resource approaching a policy-defined threshold or capacity level by extending the file system with additional capacity. It follows that a resource approaching a policy-defined threshold or capacity level is not equivalent to not being able to increase the capacity of the container.

Moreover, in making a *prima facie* case of equivalence, the Examiner should provide an explanation and rationale in the Office action as to why the prior art element is an equivalent. MPEP 2183. The Examiner has not explained, and it is not apparent, why a system being monitored from reaching a policy defined threshold or capacity level is equivalent to not being able to increase the capacity of the container.

Accordingly, the Appellants respectfully submit that page 2, column 3, lines 3-18 of Tivoli clearly fail to teach or suggest a resource tier which cannot be brought in compliance with a management policy. Therefore, the passage cannot teach or suggest if the resource tier cannot be brought in compliance with the management policy, alerting that the resource tier is not in compliance with the management policy as required by claim 10.

For at least these reasons, the Appellants respectfully assert that the Examiner has not established a *prima facie* case of obviousness for claim 10. The Appellants submit that the rejection of claim 10 is in error and respectfully request that the rejection of claim 10 be reversed by the honorable Board.

II. CLAIM 11 IS NOT OBVIOUS OVER TIVOLI IN VIEW OF POPE AND FURTHER IN VIEW OF STYCZINSKI

Claim 11

Claim 11 is dependent on claim 1 and recites, "The method of claim 1, wherein increasing available capacity in containers includes compressing data within the resource tier until the resource tier is in compliance with the management policy." It is emphasized that claim 11 requires not only compressing data but further requires performing said operation until the resource tier is in compliance with the management policy.

In rejecting claim 11, the Examiner alleges that Styczinski "teaches that increasing available capacity in

containers includes compressing data within the resource
tier until the resource tier is in compliance with the
management policy (col 15, lines 15-32)." <u>FOA</u>, pp. 6.
The cited passage of Styczinski states,

> If insufficient space exists within the conversion
> stripe to store the required COPY blocks (i.e., the
> stripe is in state 4, 6, or 7), then at least some of
> the data must be relocated from the conversion stripe
> to another stripe or another storage subsystem, such as
> to associated tape drive 405 (see FIG. 4). This
> process is shown in FIG. 11 as steps 1103-1106. The
> system first makes a determination whether storage in a
> DATA block can be freed (STEP 1103). This could be
> performed, e.g., by asking a user whether the data in
> the block can be overwritten, compressed, or stored
> elsewhere, in which case the user would make the
> choice. Alternatively, controller 403 can be
> programmed to scan the other stripes for available
> blocks to which data can be relocated, to compress data
> which can be compressed, or to select blocks for
> relocation to tape, etc., thus relocating blocks
> automatically. Controller 403 might use an algorithm
> such as least recently used to determine which block(s)
> to compress and/or relocate. <u>Styczinski</u>, col. 15, ll.
> 15-32.

The cited passage contains only two mentions of data
compression. The first such mention is ". . . asking a user
whether the data in the block can be . . . compressed . . . in
which case the user would make the choice." <u>Styczinski</u>, col.
15, ll. 24-26. However, asking a user whether data can be
compressed is clearly not equivalent to actually compressing
data.

The second mention of data compression is ". . . to
compress data which can be compressed . . . ." <u>Styczinski</u>,
col. 15, ll. 28-29. However, the cited passage does not
disclose that compressing data which can be compressed

terminates as a result of any specified condition. Therefore, the cited passage cannot teach compressing data until a resource tier is in compliance with a management policy.

Furthermore, the cited passage fails to disclose a management policy or even to suggest that a management policy exists. For a resource tier to be in compliance with a management policy, the management policy must first exist. For this reason, the cited passage clearly cannot teach compressing data until a resource tier is in compliance with a management policy.

Therefore, the Appellants respectfully submit that the passage of Styczinski cited by the Examiner fails to teach or suggest compressing data within a resource tier until the resource tier is in compliance with a management policy.

Moreover, the passage cited by the Examiner clarifies that step 1103 of Figure 11 of Styczinski includes the teaching of ". . . compress data which can be compressed . . . ." Figure 11 shows only two possibilities which may follow step 1103. The first possibility is that control passes to step 1106. Regarding step 1106, Styczinski teaches that "[i]f it is not possible to free one of the DATA blocks, the process aborts and the conversion stripe is not converted (STEP 1106)." Styczinski, col. 15, ll. 32-35.

The second possibility is that control passes to step 1104. Figure 11 shows that step 1104 is always followed by step 1105, which in turn is always followed by step 1102. In regards to step 1102, Styczinski states,

The system then verifies whether sufficient unused
space exists in the stripe to create a COPY block for
each DATA block. Specifically, controller 403 consults
stripe state table 501 to determine the stripe state; a
stripe in either state 3 or 5 has sufficient unused
space (STEP 1102). Styczinski, col. 15, ll. 11-15.

Moreover, Figure 11 of Styczinski labels step 1102
as, "State= 3 or 5?" The flowchart shown in Figure 11
clearly shows that if this condition is false, control
passes to step 1103. Thus, if the process does not abort,
step 1103 will be repeated until the state equals 3 or 5.
The following teaching of Styczinski clarifies the meaning
of states 3 and 5:

In accordance with the preferred environment, each
block of storage exists in one of five states: (1)
EMPTY; (2) DATA; (3) PARITY; (4) COPY; or (5) FREE.
Styczinski, col. 4, ll. 25-27.

Thus, state 3 indicates a PARITY block and state 5
indicates a FREE block.

It follows that step 1103 is repeated until either
the process aborts or until the state of the block is
either PARITY or FREE. The process aborting is clearly
not inherently equivalent to a resource tier being in
compliance with a management policy. Moreover, the state
of the block being either PARITY or FREE is clearly not
inherently equivalent to a resource tier being in
compliance with a management policy. Therefore, step 1103
of Styczinski cannot teach compressing data until a
resource tier is in compliance with a management policy.

Moreover, in the Advisory Action, the Examiner
alleges, "Stycziniski [sic] teaches compressing date [sic]

to increase the capacity of the container (col 15, lines 15-32) which is the management policy in the system as taught and defined by Tivoli and [Pope]." <u>AA</u>, pp. 2.

The Appellants respectfully submit that the cited allegation fails to precisely delineate the structure which is alleged to be equivalent to the management policy in the system as taught and defined by Tivoli and Pope. Regardless, the container itself is clearly not equivalent to a management policy. The capacity of the container is likewise clearly not equivalent to a management policy.

Furthermore, claim 11 is dependent on claim 1. Claim 1 recites, in part, "wherein the management policy includes requiring that an expiration date of the resource tier occur after a maintenance date." Therefore, a policy to increase the capacity of a container is not inherently equivalent to the management policy required by claim 1. It follows that compressing data according to a policy to increase the capacity of a container does not, by itself, teach or suggest compressing data within the resource tier until the resource tier is in compliance with the management policy as required by claim 11.

For at least these reasons, the Appellants respectfully assert that the Examiner has not established a *prima facie* case of obviousness for claim 11. The Appellants submit that the rejection of claim 11 is in error and respectfully request that the rejection of claim 11 be reversed by the honorable Board.

Conclusion

In view of the foregoing, Appellant submits that the rejections of Claims 1-5 and 7-11 are improper and respectfully requests that the rejections of Claims 1-5 and 7-11 be reversed by the Board.

                                Respectfully submitted,

Dated: June 17, 2008   /ido tuchman/
                                Ido Tuchman, Reg. No. 45,924
                                Law Office of Ido Tuchman
                                82-70 Beverly Road
                                Kew Gardens, NY 11415
                                Telephone (718) 544-1110
                                Facsimile (866) 607-8538

Claims Appendix

Claim 1. (previously presented) A method for managing a multi-tiered resource system, the method comprising:

automatically determining if a resource tier is in compliance with a management policy, wherein the management policy includes requiring that an expiration date of the resource tier occur after a maintenance date; and

if the resource tier is not in compliance with the management policy, automatically increasing available capacity in containers in order to bring the containers in compliance with the management policy.

Claim 2. (previously presented) The method of claim 1, wherein increasing available capacity in containers includes allocating additional capacity to containers belonging to the resource tier until the resource tier is in compliance with the management policy.

Claim 3. (original) The method of claim 2, wherein allocating additional capacity to the containers includes utilizing a capacity reserve belonging to the resource tier.

Claim 4. (original) The method of claim 2, wherein allocating additional capacity to the containers includes utilizing available capacity from other containers in the resource system.

Claim 5. (original) The method of claim 2, wherein allocating additional capacity to the containers includes allocating additional capacity to containers of higher importance before allocating additional capacity to containers of lower importance.

Claim 6. (canceled)

Claim 7. (previously presented) The method of claim 1, further comprising calculating the expiration date of the resource tier.

Claim 8. (original) The method of claim 7, wherein calculating the expiration date of the resource tier includes calculating a life expectancy of each container belonging to the resource tier.

Claim 9. (original) The method of claim 8, wherein calculating the life expectancy of the containers includes adjusting the life expectancy of the containers to account for container lead-time.

Claim 10. (original) The method of claim 1, further comprising if the resource tier cannot be brought in compliance with the management policy, alerting that the resource tier is not in compliance with the management policy.

Claim 11. (previously presented) The method of claim 1, wherein increasing available capacity in containers includes compressing data within the resource tier until the resource tier is in compliance with the management policy.

Claims 12-34. (canceled)

Evidence Appendix

None.

Related Proceedings Appendix

None.